

Missouri...

RECOGNIZES RESPONDS RECHARGES





“ We will continue to stand with Missouri farmers at every step of this disaster and throughout the recovery process.

GOV. NIXON

“ If you ain’t got water ... you ain’t got anything.
LONG-TIME FARMER’S OBSERVATION

A MESSAGE FROM
MISSOURI GOV. JAY NIXON

State agencies, partners respond rapidly to drought’s impact

Very little rainfall and record-breaking high temperatures presented Missouri with many challenges last year. State agencies, local health departments and volunteer organizations were quick to **recognize** the critical situation and come together to take action for those in need.

The disaster took its toll on every part of our agriculture industry, leaving Missouri’s farmers to face increasingly dangerous conditions due to the prolonged heat and extremely dry conditions.

At my request, in mid-July the U.S. Department of Agriculture declared all of Missouri a disaster area as a result of drought. At that point, Missouri had seen temperatures consistently above 90 degrees, averages closer to 100 degrees and, in most areas, less than an inch of rain. While there was little prospect of relief, resilient Missourians never gave up hope.

WATER NEEDED NOW

During my conversations with farmers in Ewing, Tarkio and Bolivar, they all told me that one of the biggest challenges they were facing was access to water, especially for their livestock – and that a rapid **response** was vital.

In a matter of days, Missouri developed a program to provide emergency grants to farmers to help drill wells, run pipes, install



Gov. Nixon, center, and Department of Agriculture Director Dr. Jon Hagler, right, talk soybeans with Brooks Hurst during a July 17 tour of his farm in Tarkio.

pumps – things that would give them access to water immediately.

The story that follows in these pages is one of coming together – from the first waivers for oversized loads of hay for livestock, to standing up the State’s Emergency Operations Center, to making those cost-share dollars available to farmers.

Providing those resources wouldn’t have been possible without the

leadership and support of the Soil and Water Districts Commission, the 114 local soil and water conservation districts, staff from the Missouri departments of Agriculture and Natural Resources and many partnering agencies.

WE WILL RECHARGE

Missouri remains committed to long-term success. From our more than 100,000 farms, to our rural communities and within our great cities, we will **recharge** and keep our state strong. We will continue to support Missouri’s more than 250,000 agricultural production and processing jobs and the men and women who work tirelessly to ensure that our future remains bright. It is essential that we keep agriculture – the backbone of Missouri’s economy – strong.

Sincerely,

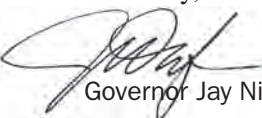

Governor Jay Nixon

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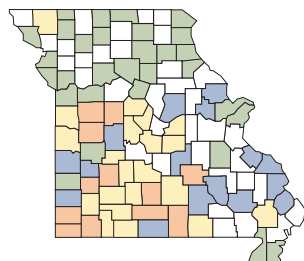


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MISSOURI RECOGNIZES, RESPONDS



July 17: Farmers tell Gov. Nixon, seated right, how the drought is affecting them during a round table at the Bolivar cattle farm of Mary and Monte Wheeler (seated, facing camera).

State response essential to keeping agriculture industry strong, jobs intact

4

Missouri farmers, farm families, agricultural producers and agribusinesses have proven themselves resilient, persistent and resourceful – even in the face of great challenges. The summer of 2012 presented a historic challenge brought by a drought, with an extremely dry summer following a warmer and drier than average winter and spring.

Missouri's farmers have long led the nation in agricultural production, nationally ranking second in the number of farms and in cattle and calves, as well as in the top 10 for poultry, horses, hogs, corn and soybeans.

Farmers and farm families' contributions to their communities have also made them economic engines by supporting youth programs, providing jobs and strengthening Missouri's rural areas.



Calves have not seen green grass.

LIVESTOCK INVESTMENT VITAL

Investing in the livestock industry to connect farmers and farm families with the resources they needed to care for livestock was vital to continuing Missouri's record of success.

Every year, Missouri's livestock auction barns each see thousands of cattle move through their arenas, totaling more than 1.5 million head in 2011. Marketers saw the number of cattle for sale spike in late summer, a time when

beef cattle are usually on the farm gaining weight and value ahead of fall sales.

LIVESTOCK, POULTRY LOSSES COULD EXCEED \$547 MILLION

It may be years before the full impact of the 2012 drought is known. However, an early estimate from University of Missouri economist Ron Plain and the Food and Agricultural Policy Research Institute predicted that financial losses to Missouri livestock and poultry operations will be more than \$547 million. Increased feed costs and changes in livestock sales and inventory for 2012 and 2013 were all considered in Plain's estimate.

CATTLE SELL-OFFS REDUCED

Efforts to help producers provide the forage and water necessary to keep their livestock on the farm helped prevent a sharp decline in the number of cattle in the state, >>>

as well as even greater economic losses to livestock producers, rural communities and agribusinesses. Investing in agriculture also helped protect more than a quarter-million jobs of Missourians who work in agriculture, including those employed on livestock farms and at auction barns.

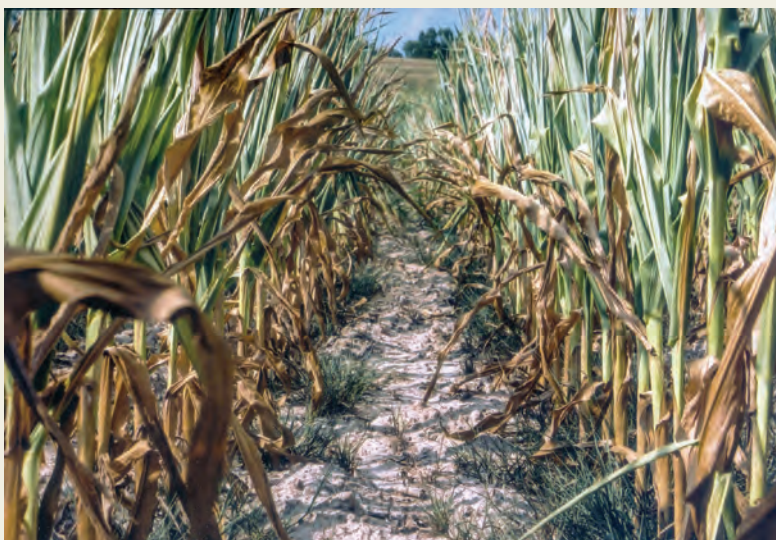
DROUGHT CHALLENGES FRUIT, VEGETABLE PRODUCERS

The extremely dry conditions challenged fruit and vegetable producers as well, demanding creativity and innovation in managing thirsty crops and those that ripened early in the heat. In 2012, the unseasonably warm spring and early summer brought ripe, locally sourced tomatoes and peaches to farmers' markets and grocery stores as much as a month earlier than usual.

The extremely dry summer also produced healthier fruits for some producers, as the lack of rain prevented much of the fungus that would typically shorten the growing season. Dry weather well into fall further lengthened Missouri's traditional tomato season into October and saw apples ripen weeks ahead of the anticipated harvest.

MISSOURIANS MEET THE CHALLENGE

Missouri agencies and organizations, from the Cooperative Extension Service to plant science and animal health companies, to local water districts and well drillers, had the opportunity to test their research and development efforts during the summer. From drought tolerant crops and new practices for helping both people and livestock cope with high temperatures, to techniques for managing workers' heat stress and other public health concerns, Missourians came together during the summer's challenging times.



Missouri corn wilts in hot, dry conditions.

DROUGHT PROGRESSION IN MISSOURI

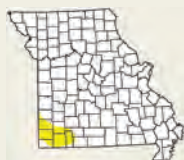
Missouri's drought conditions quickly deteriorated after May 8 when 2 percent of the state had moderate drought conditions, to Aug. 21 when 36 percent of the state was experiencing exceptional drought conditions. Hurricane Isaac brought much-needed rains the weekend of Sept. 2.

DROUGHT STAGES

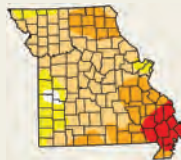
None	D0 Abnormally dry	D1 Moderate drought
D2 Severe drought	D3 Extreme drought	D4 Exceptional drought

FROM YELLOW TO RUST

On Jan. 3, 2012, only 5 percent of Missouri was abnormally dry. By June 19, 99 percent of the state was abnormally dry or drier. At the start of 2013, the entire state had abnormally dry to severe drought conditions.



JAN. 3, 2012



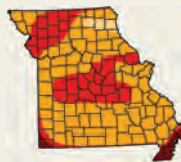
JUNE 19



JULY 24

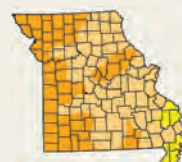


AUG. 21



SEPT. 4

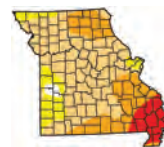
From hurricane remnants



JAN. 1, 2013

GOVERNOR OUT FRONT ASSESSING CONDITIONS

June 29: State emergency center activated, agencies quickly assist



On June 29, with drought conditions and the potential for fires rising across Missouri, Gov. Nixon issued an order activating the State Emergency Operations Center. The State Emergency Management Agency worked with the Department of Public Safety and other state, local, private and volunteer agencies to monitor conditions and coordinate information sharing on a 24/7 basis to anticipate needs and prepare to meet them.

State agencies tracked and informed response partners about weather, fires, impacts to critical infrastructure – river levels potentially affecting public water systems and electric utilities – and heat-related health impacts.

The Division of Fire Safety worked with the departments of Conservation and Transportation, the U.S. Forest Service and the state's regional fire mutual aid coordinators on enhanced rapid communications and support through DFS' statewide mutual aid coordinator.

STATE AIDS FIREFIGHTERS

Many communities imposed burn bans and fireworks restrictions. By August, some fire departments saw natural cover fires increase six- or eightfold compared with 2011; fire mutual aid activations



Above: Gov. Nixon briefs state and local officials in Farmington on June 30 on the status of fires at Mark Twain National Forest and across Missouri. From left are Public Safety Director Jerry Lee, First Lady Georganne Nixon, State Fire Marshal Randy Cole and Adjutant General Stephen Danner.



Left: About 1,200 acres burned at Mark Twain National Forest on July 5.

had tripled compared with 2011.

The drought had pushed vegetation moisture levels to historic lows, leading to fires growing larger, moving faster, and even crowning – fire spreading from tree canopy to tree canopy – which is highly unusual in Missouri. The result was wildland fires in Missouri affected more than 10,000 acres.

HIGHWAY PATROL BACKS UP LOCAL LAW ENFORCEMENT

The Missouri State Highway Patrol supported local law enforcement by providing traffic control, security, and aerial and

ground fire reconnaissance to assist incident commanders battling large wildland fires.

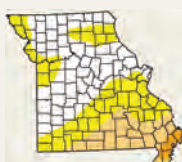
MSHP aerial reconnaissance provided situational awareness to aid in firefighting management, evacuation decisions and property and infrastructure protection.

The state's unified approach – focused on proactive measures, rapid response and working closely with local agencies – helped ensure that fires were quickly contained and that people, property and businesses were protected during the 2012 drought.

MAY 27

U.S. Department of Agriculture says 28 percent of Missouri's pastures are poor or very poor from dry conditions. Some south-central Missouri producers begin to reduce herds and sell calves early due to water shortage and pasture conditions.

MAY 29



MAY

MU's Missouri Climate Center reports May is fourth warmest on record and seventh driest with statewide average of 2.25 inches, or about 3 inches below normal. St. Louis sees nine days of 90-95° temperatures.

July 17: Missouri first state to have all counties declared disaster areas



As the extremely dry weather continued into July, losses to Missouri's agriculture community mounted. Weekly reports documented worsening conditions for corn, soybeans, forage and other crops. Producers often could do little more than watch their crops wither.

Producers in the Bootheel and along the western border were among those hardest hit by low soil moisture and high temperatures in early July. These areas were among the first to have losses assessed by the USDA's Farm Service Agency, which is the first step toward being declared a disaster area.

A disaster declaration may be given by either the U.S. president or secretary of agriculture, and recognizes a loss of at least 30 percent in a county or for a producer. Eligible farmers can then be considered for assistance, such as loans from the Farm Service Agency. Over two dozen counties were assessed in early July.

STATE DECLARED A DISASTER

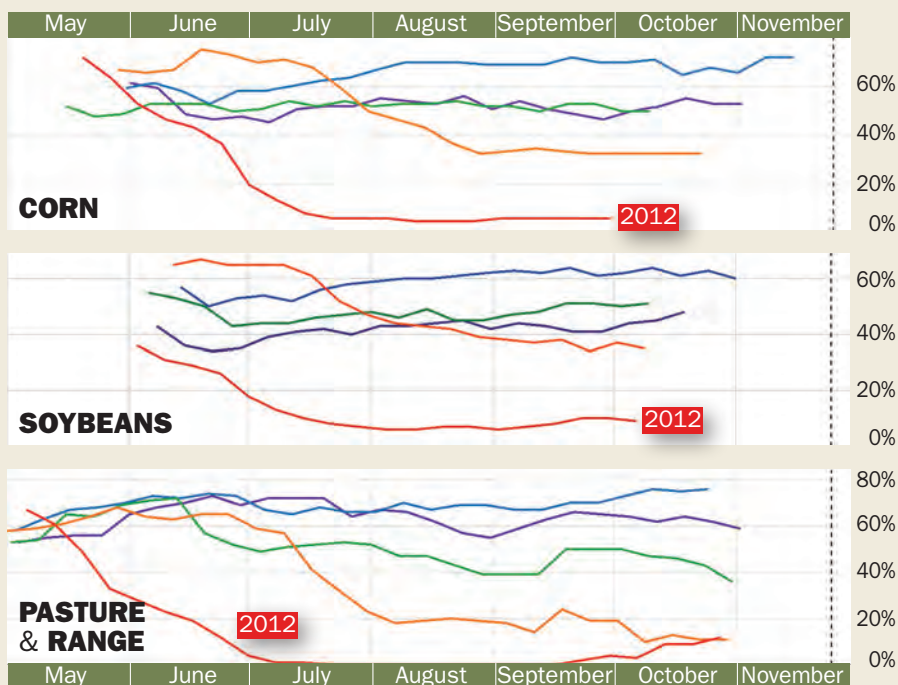
On July 10, Gov. Nixon requested a statewide assessment. He was the first governor to make such a request. The first counties received disaster declarations on July 12 from the U.S. secretary of agriculture. Within a week, all of Missouri's 114 counties received such designations.

Missouri was the first state

Five-year progress and condition of crops, pasture, range

The USDA reported that the progress and condition of Missouri's soybeans, corn and pastures in 2012 were significantly worse than in the previous four years.

2012 2011 2010 2009 2008



to receive a statewide designation. Farmers were now able to receive financial help from the USDA's Farm Service Agency.

However, even with the disaster designations and documented losses, few USDA programs were available to assist livestock farmers and communities.

STATE OF EMERGENCY DECLARED ON JULY 23

Addressing those needs was a top priority for Gov. Nixon and

Director of Agriculture Dr. Jon Hagler. Following the declaration and continued pressure from scorching temperatures, on July 23 the Governor declared a state of emergency by issuing Executive Order 12-07.

The order included a directive that the Missouri State Emergency Operations Plan be activated and additional resources, including financial assistance, be made available to those affected.

JUNE 17

USDA says 47 percent of pastures are poor or very poor. Stock water supplies are 36 percent short or very short. Some producers begin to feed hay.



JUNE 25

Missouri Department of Agriculture encourages farmers to use its online hay directory, which connects buyers and sellers in Missouri and surrounding states.

GOVERNOR OUT FRONT ASSESSING CONDITIONS

“ If you are out of hay, you can buy it. It may be expensive, but you can get it. But if you’re out of water, you’re out of business.

FARMER AT GOVERNOR’S ROUND TABLE

Governor travels state

Assesses drought impact from farmers, community leaders during round tables

Whether shared through a personal visit with the Governor, a phone call or email to him, nearly every Missourian had a firsthand example of the exceptionally hot, dry weather’s impact on their lives. Some struggled with wilting crops and thirsty cattle. Others struggled simply to stay cool under the relentless pressure of high temperatures.

ASSESSING THE IMPACT

In the summer of 2012, Gov. Nixon met with farmers, their families and community leaders specifically to discuss the affect the unprecedented conditions were having throughout the state.

In many cases, they stood in a farmer’s machine shed or gathered under a shade tree in the front yard for conversations that ranged from the price and scarcity of hay, to a lack of financial assistance for livestock owners, to the potential for water shortages as



July 17 tour: Top, Gov. Nixon visits Greg Sharpe on his 800-acre farm in Ewing during a statewide tour of the hardest-hit drought areas. Below, he talks soybeans with Brooks Hurst on his 8,000-acre farm in Tarkio.

ponds dropped and creeks slowed.

Producers talked about the need for disaster declarations to obtain low-interest loans through the USDA’s Farm Service Agency and about the high cost of hauling hay from other states.

Local leaders shared struggles with losing trees in parks and other community areas, as well as the challenge of meeting the water needs of their communities.

ROUND-TABLE DISCUSSIONS

In July, Gov. Nixon and Director of Agriculture Dr. Jon Hagler hosted a series of round-table discussions with crop and livestock farmers in Ewing, Tarkio and Bolivar.

At each of those meetings, farmers, county commissioners, local business leaders, friends and neighbors gathered to share their stories.

Some talked about low water pressure and cracked or broken water mains in town, others >>>

JUNE 25

Gov. Nixon requests USDA’s Farm Service Agency to assess livestock and crop damage caused by hot, dry conditions throughout Missouri.



JUNE 28

St. Louis hits 109°.



► Fire burns at Mark Twain National Forest in Iron County.



Gov. Nixon and Department of Agriculture Director Dr. Jon Hagler discuss drought conditions with farmers at a round table in Ewing.



July 17 tour: Gov. Nixon visits with producers in Bolivar.

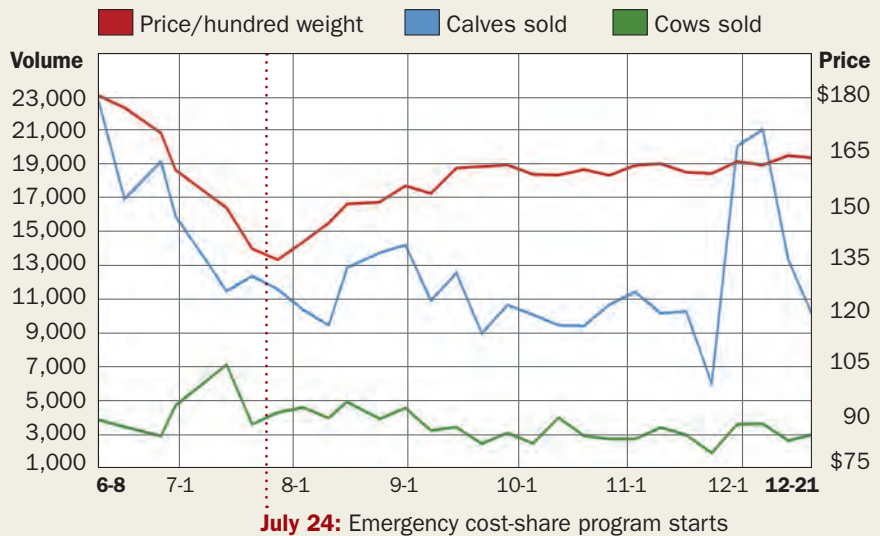
focused on dairies unable to get feed for cows and the potential impact on milk prices.

IT'S ALL ABOUT WATER

However, during a conversation on Monte and Mary Wheeler's 300-acre cattle farm in Polk County, livestock producers called attention to the importance of water. While seated around a picnic table in their front yard surrounded by dozens of neighbors, the

Missouri markets for 550-pound steers and calves

Once Gov. Nixon announced the emergency cost-share program on July 24, the sell-off of cattle and calves slowed as prices increased at the livestock markets in Missouri.



farmers spoke of the challenges created by shortages of pasture and hay, but pointed to a shortage of water as the greatest issue affecting their livelihoods.

As one neighbor pointed out, "If you are out of hay, you can buy it. It

may be expensive, but you can get it. But if you're out of water, you're out of business."

That statement helped lay the groundwork for the rest of the conversation that day, as well as future efforts to assist producers.



JUNE 29

Governor issues executive order, activating State Emergency Operations Center in response to severe heat, dry conditions and fire risks. SEMA, state fire marshal and other state agencies are directed to help coordinate resources and response with local authorities. Missouri National Guard is ordered to ready personnel and supplies to support firefighting operations if needed.

RESOURCES OPENED TO FARMERS

Online hay directory popular

Regardless of whether livestock producers needed hay that was Certified Weed Free, high-protein alfalfa, organic or simply available, Missouri's hay directory proved to be a hit with producers throughout the state. Available year-round, the online database is a place for buyers and sellers in Missouri and surrounding states to connect.

The directory dropped from 100-plus offerings of hay for sale in June to fewer than 20 listings some days in July and August. The number of visitors exploring the directory soared, increasing more than fivefold in July alone.

In addition to Missouri hay, the Department of Agriculture's directory allows farmers to access directories in eight other states.

ORGANIZATIONS JOIN EFFORTS

Missouri's agricultural commodity organizations also worked to connect producers with hay in Missouri and surrounding states. The University of



“We are dedicated to connecting Missouri farmers with the resources they need to move forward during this challenging period of dry weather.

DIRECTOR OF AGRICULTURE DR. JON HAGLER

Missouri's Cooperative Extension Service led outreach efforts among producers and rural communities. The Missouri Cattlemen's Association also led its members in developing a pasture and hay sharing network on its website.

“We continue to work with producers in every corner of our state to ensure that the Missouri Hay Directory remains an active forum for those buying and selling hay in our state,” said Director of

Agriculture Dr. Jon Hagler.

WIDE-LOAD FEES WAIVED

At the request of the Department of Agriculture, the Missouri Department of Transportation waived the fee for blanket oversize permits to haul wide loads of hay. The fee waiver extended through Dec. 31. Besides the savings of up to \$64, the waiver also allowed hay to be moved during holidays and at night.

Online resources available at MO.gov, mda.mo.gov, dnr.mo.gov

The state offered a one-stop online shop for resources, such as the latest update from the U.S. Drought Monitor, tips for caring for pets and livestock, a list of county disaster declarations, and contact information for licensed well drillers. The Web team worked to ensure that current, accurate information was readily available.



JUNE 30

Gov. Nixon briefs state and local officials in Farmington on status of fires across Missouri and at Mark Twain National Forest where about 600 acres have burned – 100 are now burning.

► Gov. Nixon directs state agriculture director to request USDA's Farm Service Agency to open Conservation Reserve Program lands (1.4 million acres) to grazing in counties with shortages of forage and rain.

Excluded lands opened

Flash grazing, haying, watering keep herds going

The Missouri Soil and Water Districts Commission took emergency action to assist livestock producers facing water shortages. It approved six practices to conduct flash grazing, haying and watering on livestock exclusion areas under contract, totaling about 140,000 acres:

- Livestock exclusion from wooded areas.
- Livestock exclusion from mostly wooded areas.
- Ponds.
- Field borders along crop fields.
- Filter strips along crop fields.
- Stream protection.

The variance was approved on July 20 by the commission at the request of Gov. Nixon following visits that week with farmers.

At this time, State Climatologist Pat Guinan reported that May 1 to July 20 marked the third driest period on record since 1895. About 90 percent of the state was experiencing severe drought or worse and precipitation was eight to 12 inches below normal.



Gov. Nixon, right, and Department of Agriculture Director Dr. Jon Hagler, left, discuss the emergency program that kept Bob Thompson's Herefords on his farm.

“The waiver allowed me to keep the core of my herd, without having to sell off an important base of genetics. Mother Nature isn't always fair.

ROLLA FARMER BOB THOMPSON

Program keeps cattle herd intact

Bob and Gretchen Thompson of Glengrove Farms near Rolla were able to better provide for their livestock as a result of a waiver from the USDA's Farm Service Agency allowing producers to graze livestock on land enrolled in the Conservation Reserve Program. The waiver was requested by Gov. Nixon.

The couple cut nearly 60,000 pounds of hay from the land to feed their herd of 40 Hereford cattle.

“It was a matter of getting enough hay to get to and through the winter months,” Bob said.

He is the third generation to work on this Missouri Century Farm, which



has a rich history in cattle production. When their farm only produced 30 percent of its normal hay crop, the Thompsons were looking for ways to feed their herd.

Without the additional land for haying and grazing, Bob said it would have been impossible to

maintain his herd.

The impact of this program will help carry the Thompsons into the coming years. Bob wasn't prepared to sell off his registered Herefords yet, but he knew he was facing desperate times.

“This program enabled me to access important resources so I wouldn't have to get rid of nearly 40 years of hard work and dedication to my herd,” he said.

JUNE

Missouri Climate Center reports that June was sixth driest on record. Statewide average rainfall was less than 2 inches – about 3 inches below normal. St. Louis sees temperatures of 90-109° for 15 days.

JULY 1

USDA says 76 percent of pastures are poor or very poor. Hay and forage are 54 percent short or very short.



JULY 5

DNR begins tracking public water systems that have or may have complications from drought. Conservation measures and restrictions are noted.

GOVERNOR ESTABLISHES EMERGENCY PROGRAM



July 24: Gov. Nixon, left, and Agriculture Director Dr. Jon Hagler survey the shrunken pond of Mexico farmer Dan Pehle, center.

July 24: Gov. Nixon announces \$2M emergency cost-share program



In response to the prolonged excessive heat and drought and the U.S. Department of Agriculture's declaration of an agricultural disaster in all 114 counties, Gov. Nixon on July 24 announced an emergency cost-share program to help farmers suffering from the historic conditions.

The day before, Gov. Nixon issued Executive Order 12-08 authorizing the state Soil and Water Districts Commission to implement practices for livestock producers and farmers to drill or deepen wells or expand irrigation systems. The cost-share program was specifically directed to address water challenges caused by the drought.

"Because of the shortage of hay and the stress on their

COST-SHARE PROGRAM CRITERIA

Applicants had until Aug. 6 to apply to their local soil and water district and were required to meet four criteria:

- 1 Be engaged in livestock or crop production and experiencing a water shortage caused by the drought;
- 2 Water shortage is severely impacting the well-being of the applicant's livestock or crop;
- 3 Proposed water source development or distribution system will immediately benefit livestock or crop; and
- 4 Proposed water source development or distribution system will not adversely affect a public water supply.

All projects approved must be completed by Oct. 1. The deadline was extended to Nov. 15.

animals from the heat, livestock producers have been especially hard-hit by the extreme weather conditions affecting almost the entire state of Missouri," Gov. Nixon said while speaking at the Springfield Livestock Market.

"This emergency program will make it easier for farmers to drill or deepen water wells, or undertake other water distribution projects sooner, in order to care for their livestock or crops."

The Soil and Water Districts Commission voted unanimously on July 23 to approve the program that provided an initial \$2 million dedicated from the state Soil and Water Program reserve to fund 90 percent of the eligible project cost with a maximum cost-share award of \$20,000.

JULY 5

New wildfire burns at Mark Twain National Forest near Centerville.

JULY 6

Emergency grazing begins in Butler, Dunklin, Stoddard and Scott counties.

JULY 7

Twelfth straight day of 98-108° temperatures in St. Louis.

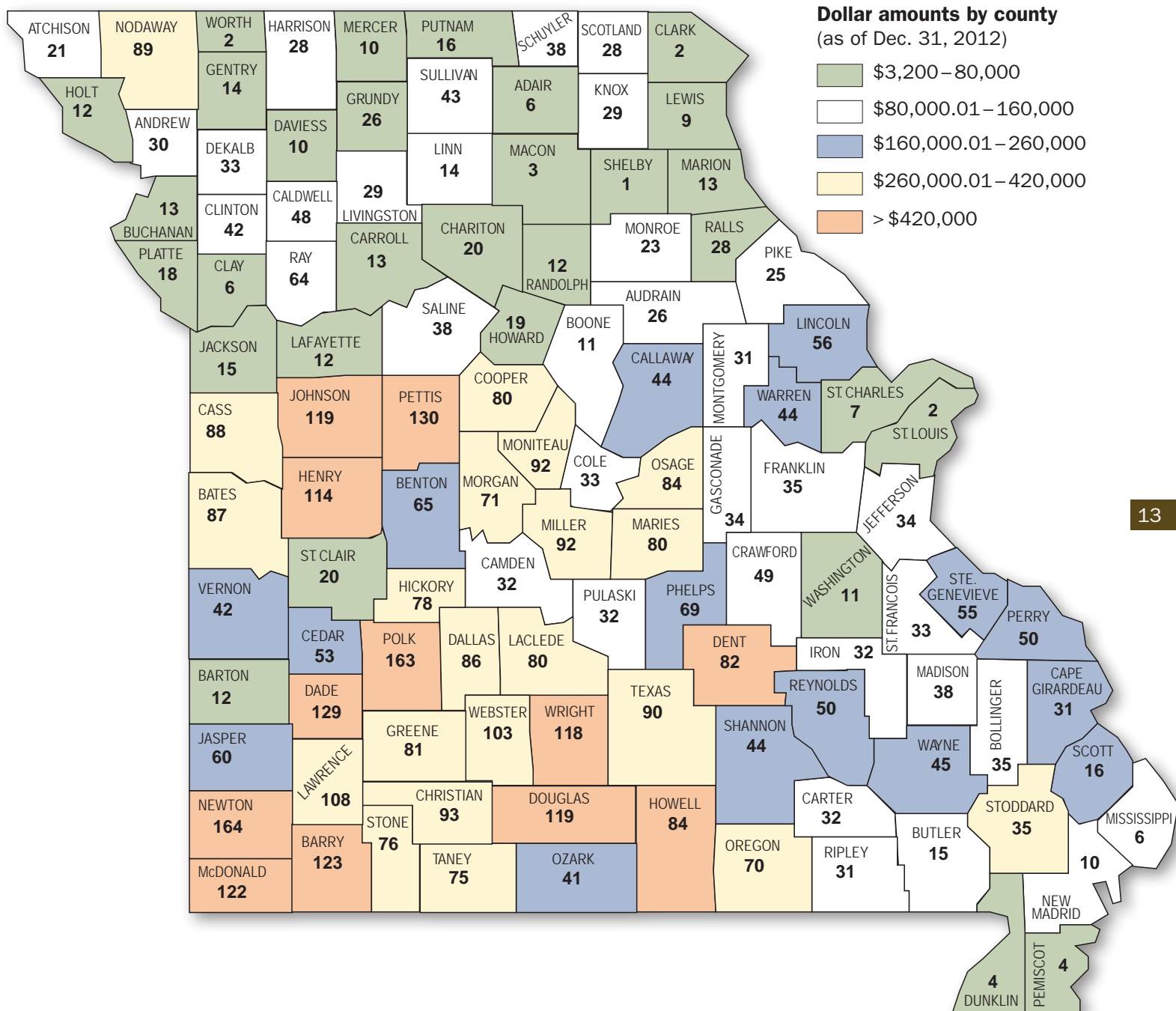




Approved emergency cost-share assistance contracts

Dollar amounts approved by county

Southern counties, which have the most livestock and poultry farms in the state, had the largest number of cost-share projects approved. Newton County had the most: 164.



JULY 9

DNR establishes Basecamp forum and begins posting weekly reports on public water supplies.



JULY 10

Gov. Nixon requests U.S. Secretary of Agriculture designate all 114 counties as primary agricultural disaster areas. USDA's Farm Service Agency then would be able to assist farmers with crop and livestock losses.

JULY 17

USDA's Farm Service Agency declares all 114 Missouri counties as disaster areas.

EMERGENCY PROGRAM ON FAST TRACK

Approval/denial process: 11,000 applications reviewed in two weeks

ASSESSING DAMAGE

On July 17, Gov. Nixon, center, views the drought effects on the Ewing farm of Greg Sharpe, right.



The Governor discusses drought conditions with farmers at the Kingsville Livestock Auction (above) on July 31 and with farmers at the Springfield Livestock Market (below) on July 24.



To review, assess and process more than 11,000 applications within two weeks, it was imperative to establish an operational plan of action.

While the emergency cost-share program included new practices, the ability to assist farmers with cost-share projects was not new to the Department of Natural Resources.

Through the 114 local soil and water conservation districts, DNR's Soil and Water Conservation Program has provided cost-share financial and technical assistance to agricultural landowners since the mid-1980s.

COST-SHARE PROCESS

During the emergency program, landowners continued to apply directly to their local districts:

- Water distribution and well construction contracts were reviewed based on crop or livestock needs. Well construction contracts also were evaluated by DNR staff to determine if public drinking water supplies would be affected.
- Applications that did not meet the criteria set forth in Gov. Nixon's executive order were denied. If approved, the contracts were processed in the >>>

JULY 17

Governor surveys hard-hit areas on statewide tour with stops at farms in Ewing, Tarkio and Bolivar.



JULY 20

At request of Department of Agriculture, MoDOT waives fee for moving wide hay loads through Dec. 31.

Department of Agriculture inspector finds satisfaction in helping farmers get water

Clinton Whitaker didn't hesitate when asked to work with farmers affected by the drought. He saw it as an opportunity to make a difference for people in his community.

Whitaker volunteered more than 100 hours to meet with farmers facing water shortages, time away from his role in the Department of Agriculture's fuel inspection program.

"I was fortunate to work close to home," he said of starting out visiting with producers about the applications for assistance through the emergency cost-share program in Dent County.

He worked with farmers to calculate the amount of water remaining in their ponds and with local veterinarians to determine the amount of water



“When you go out there and meet with people in need, it changes your outlook. This was about their livelihoods. We couldn't not help.

CLINTON WHITAKER

each cow, hog, horse or other animal would need. Evaporation due to high heat was also part of the equation.

As the extremely dry conditions continued throughout July and August, Whitaker went on to work with producers in St. Charles, St. Louis and Franklin counties, including a hog farmer in St. Charles County who was relying on a garden hose running from his home to the barn to

water and cool 4,000 hogs.

"If that hose had gone out, he wouldn't have been able to get the hogs out of the barn fast enough," he said. "We had to get him help."

Whitaker's work helped the livestock producer and dozens of others keep livestock on the farm and providing for farm families and rural communities throughout the state.

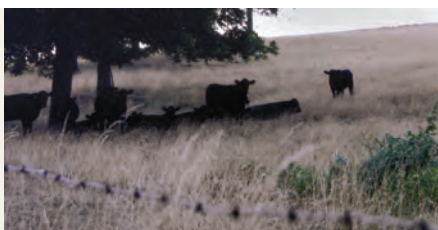
local district office. Random livestock projects in each county were spot checked to ensure they met the criteria.

- Approved contracts proceeded through the technical design phase where district staff completed a site review and designed the project to meet specifications.

- The contracts were reviewed by the local district board for funding approval and landowners were notified and provided a copy of the contracts and designs to start the project.
- Once completed, landowners gave receipts and information to the districts to start the

payment process. District staff visited the site to ensure the components and installation of the projects were completed.

- The landowner must maintain the project for 10 years. (Normal operation of the local district includes completion of spot checks of a percentage of contracts annually.)



► Governor calls on Missouri's Soil and Water Districts Commission to take emergency action to allow producers to use livestock exclusion areas (140,000 acres) under contract for flash grazing, haying and watering.

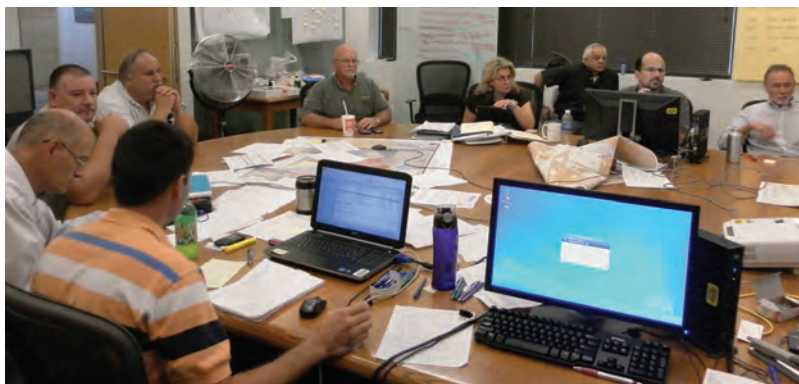
► State Climatologist Pat Guinan reports period from May 1 to July 20 is third driest on record since 1895.

EMERGENCY PROGRAM ON FAST TRACK

Approval/denial process: Review team set up to expedite applications

Gov. Nixon established the Agriculture Water Resource Technical Review Team, members of which were selected by the directors of the departments of Agriculture and Natural Resources.

The team members, who had agricultural and water resource experience, helped expedite the processing of applications and implementation of the emergency cost-share program.



The review team and DNR Director Sara Parker Pauley discuss applications.

Agriculture Water Resource Technical Review Team duties

MANAGEMENT TEAM

- **Policy, guidance:** Developed eligibility criteria and made final decisions of eligibility in special-case situations.
- **Livestock, crop review panels:** Reviewed field reports and data collected for eligibility determinations.
- **Data management:** Recorded field data, generated maps and maintained data for all teams.

PLANNING FIELD OPERATIONS LOGISTICS TEAM

These teams were deployed from DNR's command center.

- **Field assistance teams:** Volunteers helped soil and water districts conduct field visits to collect data and verify qualifications for funding. The data was sent to the Management Team to determine qualifications.
- **Field design, layout teams:** Volunteers assisted soil and water districts in conducting cost-share project design or layout.
- **Field practice checkout teams:** Volunteers helped soil and water districts conduct field checkout of cost-share projects that were completed and ready for payment.

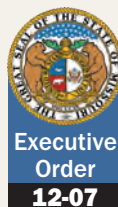
WELL AND PUBLIC WATER SYSTEM TEAM

- **Public drinking water impact:** DNR's Water Resources Center staff determined whether proposed well locations would impact drinking water or other water supplies.
- **Well drilling coordination:** DNR's Division of Geology and Land Survey coordinated with soil and water districts on well drilling and pump installation contractors during the construction and registration phase.
- **Public water system connection coordination:** DNR's Public Drinking Water Program and State Revolving Fund staff coordinated with soil and water districts to hook up to public water supplies.



JULY 22

USDA says 96 percent of state's pastures are poor or very poor. Hay and forage are 79 percent short or very short. Large ponds have dropped several feet.



JULY 23

Gov. Nixon declares state of emergency due to drought's impact on agriculture and public health. Executive order activates State Emergency Operations Plan, authorizing state agencies to assist local jurisdictions with emergency response.

Call center oversight

Daniela Heppard keeps farmers on track

Daniela Heppard is no stranger to dealing with emergency situations. She works in DNR's Environmental Emergency Response section and serves a critical role in assisting during natural disasters. So, it was no surprise she was selected to establish a call center that initiated and maintained contact with producers as they worked to get their cost-share projects completed by an Oct. 1 deadline. It was extended to Nov. 15.

Heppard was instrumental in quickly getting the call center operational, which took an exceptional amount of coordination. She set up a database to increase efficiency and accuracy, and collected information to manage and track contacts. She also trained staff as information needs changed.

Heppard would be the first to attribute the success of the call center to the 370 staff members who volunteered. However, she worked 15- to 16-hour days, seven days a week alongside the team.

"Daniela was there every day of its existence to ensure as smooth



“This disaster response was different from all the others I responded to in the past. ... It was the emotions and frustrations of the farmers, and the passion of the people in the call center that made this assignment a truly rewarding experience. We all cheered every time a farmer said he had running water and the project was complete.

Call Center Coordinator Daniela Heppard

and efficient operations as possible and the ready flow of information to decision makers,” said Sara Parker Pauley, DNR director. “Her demeanor and approach to the ever-

changing dynamics and demands of the call center provided the leadership and direction necessary to get assistance to the farmers who needed it.”

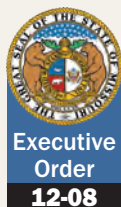
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Call center team stats

The center operated Aug. 14 through Oct. 4. In August, hours ran daily from 7 a.m. to 9 p.m. Hours fluctuated in September – 8 a.m. to 7 p.m. weekdays – and as needed.

- Days of operation: 35.
- Call center hours logged: 7,214.
- Team members who staffed call center: 370.
- Team members working each day: About 38.
- Phone calls made or received: 31,241.



► Governor issues order authorizing Soil and Water Districts Commission to implement emergency cost-share program for farmers to drill or deepen wells or expand watering systems. Order establishes Agriculture Water Resource Technical Review Team.

► Soil and Water Districts Commission approves \$2 million to fund 90 percent of eligible project costs with maximum award of \$20,000. Deadline to apply is Aug. 6.

► DNR's Public Drinking Water branch coordinates with regional offices to survey every public water system in Missouri to assess drought impact.

EMERGENCY PROGRAM ON FAST TRACK



On July 30, while visiting a diner at the Joplin Regional Stockyards, Gov. Nixon reminds farmers of the approaching emergency cost-share program application deadline.

July 26: Gov. Nixon directs additional \$5 million into emergency cost-share program

18

“The tremendous response to an emergency program to help drought-affected farmers demonstrates the great need for water for livestock and crops in Missouri,” Gov. Nixon said during a July 26 press conference.

In the first two days after he announced the program, more than 600 farmers submitted applications and the soil and water conservation districts had approved 33 contracts averaging \$6,300 each.

As a result, Gov. Nixon directed another \$5 million into the program to supplement the initial \$2 million. House Bill 8 authorized the Governor to direct funds for “responding during a declared emergency ... provided the services



Gov. Nixon visits with staff of the Kingsville Livestock Auction on July 31. He stressed the cost-share program deadline.

furnish immediate aid and relief.”

By July 30, the state had approved 490 contracts totaling \$2.1 million, Gov. Nixon announced while visiting the Joplin Regional Stockyards.

LONG HOURS, LONG WEEKENDS

The agency staff and districts continued to work long hours and weekends to review and process applications.

While speaking at the United >>>



JULY 24

Gov. Nixon announces emergency cost-share program at Springfield Livestock Market. He also visits Dan Pehle’s farm in Mexico.

JULY 26

Governor instructs Department of Social Services to redirect \$1.5 million in LIHEAP funds to assist low-income Missourians with cooling costs.

“Agriculture is the backbone of Missouri’s economy, and we are working quickly to provide emergency relief for farmers and producers who are facing critical water shortages.

GOV. NIXON

Program’s first 2 days:

- 600+ applications
- 33 contracts approved
- \$6,300 average award

Producers Livestock Market in Maryville and the Kingsville Livestock Market on July 31, Gov. Nixon said the state had approved 818 applications totaling more than \$3.8 million.

“I appreciate the dedicated employees of the local soil and water districts, the Missouri Department of Agriculture and the Missouri Department of Natural Resources’ Soil and Water Conservation Program for putting in long hours over the past two weeks, including both weekends,” Gov. Nixon said on Aug. 8.

“These professionals, with support from members of our state technical assistance review team, have ensured that the projects approved meet the strict and specific criteria outlined by my executive order ... These folks have ensured that this program moved forward quickly, efficiently and with accountability to Missouri taxpayers,” he said.

More than 3,700 applications, totaling \$18.7 million, had been approved within two weeks since the program was established.

Cost-share program: Helping farmers since mid-1980s

Despite the reduction in soil erosion across Missouri, millions of tons of soil continue to wash away every year on cultivated cropland.

To help reduce erosion rates, the Missouri Soil and Water Districts Commission develops voluntary programs, such as the cost-share program, for agricultural landowners. They are funded by the parks, soils and water sales tax.

Through the 114 soil and water conservation districts, DNR’s Soil and Water Conservation Program has provided financial and technical help to farmers since the mid-1980s.

The cost-share program has provided up to 75 percent of project costs, with the landowner paying the rest. The districts provide technical support with the design, implementation and maintenance of the projects. DNR has reimbursed farmers more than \$570 million for their projects that increase farm production while protecting the environment.

In 2009, Gov. Nixon signed House Bill 250, which expanded the number of conservation practices from 17 to 43.

Conservation districts focus

on seven resource concerns to control soil erosion and protect water quality. Cost-share practices are available in these categories:

Animal waste management:

Reduces or prevents degradation of soil and water resources from animal waste runoff.

Grazing management: Used in pastureland with established non-woody, permanent vegetative cover.

Irrigation management: Some irrigation systems can cause excessive runoff and water use.

Nutrient and pest management: Runoff from improper nutrient and pest management practices can affect water quality.

Sensitive areas: Land where management has impacted erosion, surface water and groundwater.

Sheet, rill and gully erosion: Unwanted removal of surface soil or through incised channels caused by rain and runoff.

Woodland erosion: Removal of soil or vegetation through livestock trampling or improper tree harvesting.



► Gov. Nixon directs additional \$5 million into cost-share program. More than 600 farmers have applied; 33 applications have been approved. Average award is \$6,300.



JULY 27

DNR completes survey of all community and non-community public water systems. More than 2,800 report.

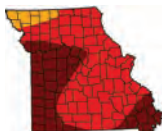
“ There is no doubt that Mother Nature has
We are standing with our farmers, helping

State Fair briefing

Emergency response team updates ag industry

G ov. Nixon met with his emergency response team at the Missouri State Fair to review ongoing efforts to address extremely dry conditions throughout the state.

The Aug. 16 meeting included public briefings from key staff members in the Governor’s cabinet and the state agencies heavily involved in the drought response effort.



More than 50 guests from Missouri’s agriculture community also joined the discussion, ensuring that Missouri’s crop and livestock producers were represented, as were agribusinesses and rural communities.

The briefing featured presentations on the potential for wildfires and the public health threats created by the drought from the Missouri Department of Public Safety,



Agricultural organizations, agencies represented

- Missouri Corn Growers Association
- Missouri Soybean Association
- Missouri Pork Association
- Missouri Dairy Association
- Missouri Cattlemen’s Association
- Missouri Forest Producers Association
- Missouri Beef Industry Council
- Missouri Poultry Federation



JULY 28

DNR Director Sara Parker Pauley says departments of Natural Resources and Agriculture have six teams throughout state gathering information to expedite assessments.

JULY 29

USDA says 98 percent of pastures are poor or very poor. Hay and forage are 86 percent short or very short. Crops deteriorate: 83 percent of corn and 72 percent of soybeans rated poor to very poor. Stock water supplies are 91 percent short or very short.

hit our agriculture industry hard this year.
 them where we can.

GOV. JAY NIXON



Gov. Nixon and members of his cabinet staff and emergency management team brief the crowd on their drought response efforts. Attendees included farmers and representatives of agricultural organizations.



Association
 ts Association
 y Council
 ation

- Missouri Farm Bureau
- U.S. Department of Agriculture agencies – Farm Service Agency, Rural Development and Natural Resource Conservation Service

followed by a review of environmental conditions from the Department of Natural Resources.

Missouri Director of Agriculture Dr. Jon Hagler gave the final presentation, highlighting the worsening condition of the corn, soybean and forage crops, as well as the struggles producers face providing water for their livestock.

Hagler's presentation also included a telling example of the success of Gov. Nixon's emergency cost-share program to keep water flowing to livestock – a chart showing that the number of cattle sold each week at Missouri auctions was climbing steadily as drought conditions worsened until the program was announced in late July. But within one week of the program's launch, sales steadied.

"There is no doubt that Mother Nature has hit our agriculture industry hard this year. We are standing with our farmers, helping them where we can," said Gov. Nixon.

As the meeting ended, leaders from many of Missouri's agricultural organizations stood to thank the Governor for his efforts on behalf of Missouri agriculture, including Missouri Farm Bureau President Blake Hurst and Missouri Cattlemen's Association President Lonny Duckworth, who thanked Gov. Nixon for his continued support for Missouri farmers and the agriculture industry.

21



JULY 30

Governor visits Joplin Regional Stockyards to spread the word about cost-share program. The state has received 1,250 applications and approved 490 contracts totaling more than \$2.1 million.

► DNR coordinates with Missouri Rural Water Association to buy equipment to help association's staff perform drought-impact assessments for public water systems.

SOIL AND WATER PROTECTED

Department of Natural Resources acts swiftly

“The 2012 drought brought into sharp relief the importance of our water resources and exposed certain vulnerabilities for which we must plan,” said Sara Parker Pauley, director of the Department of Natural Resources.

From protecting water quality to ensuring safe drinking water to providing assistance for Missouri’s working farms and communities, DNR engages in a multitude of efforts to protect and enhance Missouri’s most precious natural resources.

DNR MOBILIZED QUICKLY

“During the emergency cost-share program, the department provided the technical expertise to address environmental and agricultural situations and was prepared to implement the program within a moment’s notice,” she said.

The cost-share program



“Time and time again, our staff continues to demonstrate their dedication and true passion for protecting public health and our natural resources for all Missourians.

**DNR DIRECTOR
SARA PARKER PAULEY**

included a tremendous amount of coordination and review effort to ensure a seamless process.

“Nearly 700, or half, of the department’s entire staff worked more than 40,000 hours from when the program was announced

through Nov. 30 – and the work continues.

“I truly appreciate the amount of time staff invested in this important effort, away from their family and friends,” Director Pauley said.

Audit team ensures projects comply with contract terms

Gov. Nixon directed the establishment of a Program Audit and Compliance Team reporting directly to the state budget director to confirm adherence to program criteria and compliance with contract terms. The team will audit completed projects throughout the state.

The team includes 15 members who were reassigned from their normal state job on a

temporary basis to carry out the Governor’s directive.

By Dec. 20, the team had audited more than 550 projects. The team has found significant compliance with program guidelines and is following up with landowners and local district staff when necessary to ensure they have complete information about audited projects.



JULY 31

Governor visits United Producers in Maryville, left, and Kingsville Livestock Market. Reminds farmers that cost-share applications are due Aug. 6.

► State has approved 818 contracts for cost-share projects, totaling more than \$3.8 million.

How emergency cost-share program has kept farmers going throughout Missouri

1 NEWTON COUNTY

Mike, Judy and Gale Turner

own 150 head of cattle. In past years, they have watered them with three ponds and a spring. The prolonged drought dried up the spring and two ponds – the remaining pond had only inches of water remaining.

Emergency cost-share program

results: New well, distribution line and tank.

Cost: \$9,687.

Scott Wagner has 85 cattle and 92,000 broilers. His cattle well had gone dry, and the broiler well could not support both operations.

Program results: New well and distribution system.

Cost: \$7,585.

2 BARTON COUNTY

Walter Garfield raises soybeans and corn. He had lowered his pump as far as possible, but it was surging and running out of water. His crops needed several more weeks of irrigation to be successful.

Program results: New irrigation well.

Cost: \$20,000.

3 TEXAS COUNTY

Terry Collins has 90 head of cattle. He had watered his cattle on springs and ponds on his property, and on a creek flowing through his farm. His springs had stopped flowing; his ponds were nearly exhausted; and Beaver Creek had gone dry. Collins was concerned he would be forced to sell some cattle within a week.



Program results: New well and distribution system.

Cost: \$10,151.

4 RIPLEY COUNTY

Kasey Hunt has 1,200 cattle in Ripley County. His ponds had gone dry and his existing well and tanks could not support his large operation.

Program results: New water line and two tanks.

Cost: \$8,244.

5 JOHNSON COUNTY

T&L Farms has about 50 cattle on 80 acres. The pond was running low, and the water was unfit for drinking. A secondary catch basin also was dry. The producer was forced to move about half the cattle off the property.

Program results: New well, distribution line and tank.

Cost: \$11,904.

Joe Bohannon has about 300 cow/calf pairs on 100 acres. One pond was completely dry and the other was extremely low. Bohannon has been hauling in water non-stop.

Program results: New well, distribution line and tank.

Cost: \$9,794.

6 RAY COUNTY

Mike Taylor has 400 cattle. For the first time, his ponds went dry. He says the program will help avoid a partial sell-off of his herd.

Program results: New tank and pipeline.

Cost: \$2,233.

7 NODAWAY COUNTY

Jason Thompson has 23 cows and 17 calves on 80 acres. He estimated that his cattle have about one week of water left before his pond will run dry.

Program outcome: New distribution line and tank.

Cost: \$1,723.

Jack and Patty Fisher have 125 cows, 115 calves and five bulls on 450 acres. Their well was going dry and could not adequately water the cattle.

Program results: New well developed.

Cost: \$6,382.

JULY

By end of July, National Agricultural Statistics Service says Missouri has worst corn, soybean and pasture conditions. Records are set for third warmest and third driest May-July period in Missouri. St. Louis sees 29 days of 90-108° temps; rainfall totals 0.28 inch.

AUG. 1

Small, nonfarm businesses now eligible for low-interest disaster loans from U.S. Small Business Administration.

► Over concern that hay shortages might spread, Department of Agriculture gets MoDOT's approval for farmers to haul overweight loads of silage and baleage on select highways.

SOIL AND WATER PROTECTED

Soil and Water Conservation Program staff works tirelessly with local districts

DNR's Soil and Water Conservation Program administers the policies and general programs developed by the Soil and Water Districts Commission. It encourages actions at the local level to conserve soil and improve water quality by promoting farming practices and assists districts as they promote conservation to their constituents.

The program directly assists the districts through grants to the county soil and water conservation district boards so they may employ staff and fund other administrative expenses.

SOIL AND WATER SUPPORT

To help fund soil and water conservation efforts, voters passed a one-tenth-of-one-percent parks, soils and water sales tax in 1984. Missouri was losing soil at a rate of 10.9 tons per acre each year on cultivated cropland and had the nation's second highest rate of erosion.

Almost two-thirds of voters renewed the tax in 1988 and 1996. In 2006 it passed by over 70 percent. Since the early 1980s, Missouri's erosion rate dropped more than any other state. Over 148 million tons of soil have been saved since the start of the tax. Missouri's success is regarded nationally as a model for other states.

Employees association recognized for efforts

The Missouri Association of Soil and Water Conservation Districts promotes the conservation of soil and water resources. It is made up of eight area directors who lead efforts in promoting conservation education and a forum for training, policy-making and exchanging information.

The Missouri Soil and Water Conservation Districts Employees Association is affiliated with the district association. It is managed by a board of 16 representatives. It works to maintain high standards for conservation district employees by encouraging the exchange of information and ideas.

About 280 employees in the state's 114 soil and water conservation districts reviewed and processed emergency cost-share projects. As of Nov. 30, 2012, district employees had worked nearly 49,000 hours.



Sandy Stratman, left, president of the Missouri Soil and Water Conservation Districts Employees Association, receives a Governor's Proclamation declaring Nov. 27, 2012, as Missouri Soil and Water Conservation District Employees Day from Sara Parker Pauley, DNR director. The proclamation recognizes its work on the drought assistance program.

DROUGHT ASSISTANCE

During the drought, DNR's Soil and Water Conservation Program staff carried out its daily and new duties at an accelerated rate.

Staff guided and supported the local soil and water conservation districts, kept officials informed

of progress and challenges, worked with district offices to help handle the large workload and fielded hundreds of calls from landowners unfamiliar with their districts.

Many districts, not familiar with available projects, requested technical assistance. >>>

AUG. 2

U.S. Drought Monitor reports nearly 93 percent of state is in extreme drought, up from about 69 percent last week – 54 percent of corn crop is very poor.

AUG. 3

In phone call to soil and water districts, Gov. Nixon says: "In the past 10 days, you've made history. You've provided vital assistance to Missouri's farm families."



Conservation program director Colleen Meredith acts rapidly to implement cost-share program

Colleen Meredith and her husband own a farm in Moniteau County, so she saw first-hand the impact the drought was having on agricultural producers and the necessity for the state of emergency declared by Gov. Nixon. Meredith knew she could help during this time of need and understood that her office would play a critical role during the implementation of the cost-share program.

Meredith began her career in the Soil and Water Conservation Program in 1997 and also gained experience working on water issues within DNR's Water Protection Program but returned in 2011 to direct the Soil and Water Conservation Program.

"The staff expertise within the program as well as the Department of Natural Resources resulted in a very comprehensive approach to drought assistance for applicants," said Meredith. "The dedication of the program staff was and continues to be amazing.



“The completed projects will continue to provide water for farmers, producers and landowners for years to follow.

**PROGRAM DIRECTOR
COLLEEN MEREDITH**

"Sara Parker Pauley, director of the Department of Natural Resources, and management staff were working right alongside, demonstrating their leadership during this emergency at the highest level of the department," added Meredith.

Many staff members working on the program put aside their family priorities to work long days, nights and weekends to ensure their neighbors were able to water their livestock and crops. The drought also brought out the best in others.

Meredith said she received many calls that told of neighbors sharing well water to keep

livestock alive until a well could be drilled. The Soil and Water Conservation District staff and board members, and partnering agencies all had similar stories.

"During emergencies you really see what people are made of and the staff that worked on this project was the most hardworking, selfless group that could be imagined. Developing contracts for so many projects in a few weeks took teamwork from both the state and local level. The completed projects will continue to provide water for farmers, producers and landowners for years to follow," said Meredith.

DNR set up on-site and online training so districts would be aware of requirements for well drilling, water distribution pipelines, and tanks for water distribution points.

"Without hesitation, the department's Soil and Water Conservation Program staff, as

well as countless others, worked tirelessly – over long weekdays and weekends – to help provide much needed relief to farmers and livestock producers," said Sara Parker Pauley, DNR director.

"The department's staff demonstrated their unwavering

dedication and technical expertise that was so critical to the emergency cost-share assistance program, which also showcased the type of work they have been providing to farmers and landowners since the mid-1980s."

AUG. 5

Governor addresses and thanks staff working on cost-share program for hard work and long hours to quickly review, approve and oversee program.

AUG. 8

State has approved 3,712 cost-share contracts totaling \$18.7 million.



AUG. 12

USDA says 98 percent of pastures are poor or very poor. Hay and other roughages are 89 percent short or very short. Stock water supplies are 91 percent short or very short.

SOIL AND WATER PROTECTED

Soil and Water Districts Commission got start from 1930s Dust Bowl

In the 1930s, as the Dust Bowl swept across the nation relocating an estimated 300 million tons of soil, legislation began to take shape to better manage and conserve the nation's soil.

The federal government established the Soil Erosion Service that resides within the U.S. Department of Agriculture and is now known as the Natural Resources Conservation Service.

To address soil erosion here, the Missouri General Assembly created the Soil and Water Districts Commission in 1943. Through the organization of 114 soil and water conservation districts, the commission helps save, maintain and improve the state's soil, water and soil fertility.

COMMISSION DUTIES

The commission determines the policies and general programs for saving Missouri's soil and water resources giving consideration to the districts' needs based on their character.

DNR's Soil and Water Conservation Program supports and helps carry out the role of the commission.

The commission and districts work with the USDA's Natural Resources Conservation Service to further soil conservation practices.

Commission members

The Soil and Water Districts Commission is composed of six farmers and four ex-officio members. Three of the farmers must live north and three must live south of the Missouri River. The ex-officio members are directors of the departments of Natural Resources, Agriculture and Conservation, and the dean of MU's College of Agriculture, Food and Natural Resources. Colleen Meredith is DNR's staff director of the Soil and Water Conservation Program.

FARMER MEMBERS (ONE VACANCY)



Richard Fordyce
Chairman,
Bethany



Gary Vandiver
Vice Chair,
Richmond



Charlie Ausfahl
Fulton



Kathryn Braden
Bradleyville



Thomas Bradley
Sikeston

EX-OFFICIO MEMBERS



Dr. Jon Hagler
Director,
Agriculture
Department



Sara Parker Pauley
Director,
Natural
Resources
Department



Thomas Payne
Dean, MU
College of
Agriculture,
Food and
Natural
Resources



Robert Ziehmer
Director,
Conservation
Department



Colleen Meredith
Staff director,
Soil & Water
Conservation
Program



AUG. 13

Gov. Nixon visits a Newton County dairy farm, left, approved for a well. Later, he visits a Polk County farm that had a well installed.



► DNR sets up call center with 20 phone lines to contact cost-share recipients.

COMMISSION TIMELINE

Commission quick to allocate funds

July 20: Gov. Nixon calls on Soil and Water Districts Commission to take emergency action to allow farmers to conduct flash grazing, haying and watering in state cost-share projects that are under a contract for livestock exclusion areas. The commission votes to allow a variance for projects on 140,000 acres for 60 days to assist with the forage shortfall.

July 23: Gov. Nixon signs Executive Order 12-07, declaring a state of emergency. He also signs Order 12-08, authorizing the commission to implement the cost-share program. The commission unanimously approves \$2 million in program funding the same day.

July 26: The commission meets to address the overwhelming program response from farmers. It unanimously approves allocating \$4.8 million to assist applicants.

Aug. 21: The commission meets to review program progress. It votes to approve splitting the remaining program costs equally with other state funding sources. This amount is in addition to its previous allocation of \$6.8 million and \$5 million committed by the Governor.

114 conservation districts educate, assist Missourians

Missouri's 114 soil and water conservation districts are organized under state law to carry out the state's soil and water conservation programs. They provide Missourians with the education, conservation, technical assistance and financial incentives for eligible landowners at the local level to decrease soil erosion and improve water quality.

HARRISON COUNTY FIRST

Missouri joined the movement to localize soil and water efforts when Harrison County formed the first soil and water conservation district in 1944 and by 1996, Washington County became the final county to establish a district.

Each district is governed by a locally elected board of five supervisors responsible for all district actions and employees. Four supervisors are county landowners elected to four-year terms. The fifth is from University Extension.

Board members are unpaid public officials, and districts have no regulatory or taxing authority. Board meetings usually are held monthly and are open to the public.

Because Missouri agriculture is as varied as its land, the programs and services offered vary by district. Each district develops a long-range plan to prioritize area needs.

District programs use technical, financial and informational services available from local, state and federal agencies.

Most districts receive and administer locally generated funds as well as funds from the state and federal government. They also provide activities such as grazing schools and field tours.

COST-SHARE BIG PART OF JOB

A primary activity for each district is to locally govern Missouri's cost-share program, administered by DNR's Soil and Water Conservation Program.

Soil and water conservation districts are local people solving local problems.

Drought leads national news

On Aug. 17, NBC Nightly News aired a national story about the drought in Missouri and the emergency cost-share program. Reported from Truxton, the segment focuses on how the state's emergency program is helping drought-stricken farmers.

video.msnbc.msn.com/nightly-news/48708168



AUG. 14

Agriculture Department gets MoDOT's approval to allow heavier loads of grain during harvest. Lower water levels on Missouri and Mississippi rivers can limit grain movement by barge.

LOCAL DISTRICTS QUICK TO REVIEW PROJECTS

Chairman pleased to see new clients served

For the board of the Christian County Soil and Water Conservation District, the emergency cost-share program involved meetings, field reviews and paperwork to approve 106 wells and water distribution projects for 59 cattle farmers.

District Board Chairman Sam Schauman noted that 58 of the applicants had never participated in the regular cost-share programs.

“With the drought relief program, things were certainly different and the district anticipates a change in clientele,” said Schauman. “At first I thought even I would be eligible for the program until I realized that the watering system I had in place from the Natural Resources Conservation Service’s Environmental Quality Incentives Program would get me through the drought.”

If Schauman wouldn’t have made the investment years ago with the federal cost-share program,

PROFILE

CHAIRMAN SAM SCHAUMAN Christian County Soil and Water Conservation District Board



“The wells and improved watering infrastructure will pay off in a big way for the long term.”

he would have been in a situation much like those deemed eligible. “Now we just need to build on this and get the word out about day-to-day programs.

“Our district had a field day last month, a demo of a livestock watering system, and we had a really good turnout. Lots of people came who otherwise had never engaged in the whole soil and water conservation process.”

New watering infrastructure will maintain the health of the local farm economy for years to come, Schauman said.

“The next few droughts we have down the road will be easier for a lot of farmers to get through. That’s good for our area and the whole state. Wider exposure of the district’s programs to new clients was a good thing for future soil and water conservation efforts,” he said.

PROJECT INSPECTIONS:

Department of Natural Resource’s Cindy Thompson inspects a well project on Nov. 16 at the Meert Tree Farm in Jefferson County.



AUG. 15

Governor visits Clarksburg Farms in Moniteau County.



► State approves more than 4,600 cost-share applications at average cost of \$4,800.

AUG. 16

Gov. Nixon provides update on drought efforts at Governor’s Ham Breakfast at State Fair: “Our farmers and producers feed, fuel and clothe the world. And when agriculture moves forward, all of Missouri moves forward.”

Laclede County office workload doubles in 4 months

Like many district offices, the Laclede County Soil and Water Conservation District has two full-time staff members who process 60 to 80 applications a year for state cost-share projects.

Under the emergency cost-share program, the district received 193 applications of which 86 were approved for well drilling and water distribution projects for 58 beef cattle ranchers.

Program Specialist Mary Jo Tannehill said it was “like dealing with double the usual year’s workload, but in only a four-month period” for she and technician Jimmie Lee Haines.

When Gov. Nixon issued Executive Order 12-08, the Laclede district knew there would be a lot of interest from past clients as well as those new to cost-share projects.

Laclede County has the rolling hills and forage to support a moderate number of cattle farms. Lack of water for cattle is what led the district to believe farmers would have heavy interest.

“We heard a lot of people say that if they hadn’t received the help, they would have needed to sell off

PROFILE

Laclede County Soil and Water Conservation District Office



Mary Jo Tannehill, left, and Jimmie Lee Haines.

“Rescuing our neighbors’ livelihoods was worth the long hours.”

PROGRAM SPECIALIST MARY JO TANNEHILL

all their cattle, their whole herds that they’d built up over many years,” Tannehill said.

“That goes a long way for a county that in the past was in the top 10 counties for dairy production and very high on overall livestock production in the state. We had people afterward who would come up to us ... hug us, and tell us how much the program meant to them.”

The district board and employees

also noted that the program rallied people with a common goal to come together to help one another.

Tannehill said one man forfeited his application because he thought his neighbors needed it more and he could afford to reduce his herd. This was very common among landowners in the county and that “certainly was good to see farmers more concerned about his neighbor’s farm more than his own.”

29



DNR's Guy Frazier inspects a well project on Nov. 14 at Brian and Kristy Allen's farm in Pettis County.



► At Missouri State Fair, Governor and his state emergency management team brief farmers and ranchers on how they regularly meet to share updates, track trends, strategize and target resources where have greatest impact. “Missouri has responded as one team,” Gov. Nixon says.

PUBLIC WATER SUPPLIES PROTECTED

DNR monitors public water supplies

By the beginning of July 2012, it was becoming apparent that the drought was likely going to extend into fall. Public water systems were beginning to see a significant increase in water usage by customers. Although systems are designed to accommodate seasonal variations in demand, the extremely hot, dry conditions presented several challenges.

Increased demand generally increases the strain on a system's infrastructure. Although there are practices most systems can use to mitigate drought impacts, such as voluntary or mandatory conservation measures, the complications often must be handled case-by-case at the local level.

The Department of Natural Resources worked closely with public water systems to ensure they could continue to sufficiently provide quality drinking water.

DNR SURVEYS SYSTEMS

In early July, DNR surveyed all regulated public water systems. A variety of information was collected, including supply capacity projections, measures taken to conserve water, and alternative sources of raw water available.

The department then developed a list of systems concerned about continued drought, and prioritized assistance and mitigation efforts.

Systems that use surface sources,



Boy Scouts of America,
Greater St. Louis Area Council

Good deed: The Boy Scouts sent 100 million gallons of water from its Nim's Lake to the City of Fredericktown.

Good deeds flow during drought

During the drought, many public water supplies were struggling to find enough water for customers. Fredericktown was no different.

At the height of the drought, levels on the city's drinking water source, Fredericktown City Lake, were at a record low. City officials asked customers to conserve water and asked the Boy Scouts for help.

Just 10 miles north of Fredericktown, the Boy Scouts of America own the 5,200-acre S bar F Scout Ranch. It is one of the premier and largest Scouting facilities in the nation and is home to the state's largest privately owned, man-made lake.



Nim's Lake is 270 acres and connects to Fredericktown City Lake via the St. Francois River. The lake and its activities

draw hundreds of Scouts.

Camp rangers offered to release 100 million gallons of water from Nim's Lake to supplement the city's water needs in August. City officials reported that within a week, water levels on the city lake rose by eight inches. If not for this good deed, the city likely would have experienced water shortages well into the fall.

The assistance demonstrated that Scouts are indeed friends to all and continue to provide good deeds.

such as streams or reservoirs, are particularly vulnerable to extended droughts since they rely on precipitation to get recharged.

Systems that use groundwater generally are not as affected; however, an extended drought can rapidly deplete groundwater levels.



AUG. 17

Call center expands phone lines to 40. Hours are 7-9 weekdays; 9-9 Saturday and 11-7 Sunday.



AUG. 21

Gov. Nixon visits the Kim Keith family farm in Greene County.

Public water supplies can't be harmed

Executive Order 12-08 required water projects to not adversely affect a public water supply.

The Department of Natural Resources worked closely with the team reviewing applications to assess and ensure the proposals would not negatively affect public water systems or compromise supply capacity.

Proposed projects located within one-half mile of public water supply wells initially were declined pending a detailed review. Ultimately, the majority of proposed wells were approved with conditional factors such as well-depth limits or capacity restrictions.

Other projects were encouraged to connect to existing public systems where feasible. Due to supply

capacity and infrastructure issues, eight public water districts did not accept additional service connections and four allowed connections on a case-by-case basis.

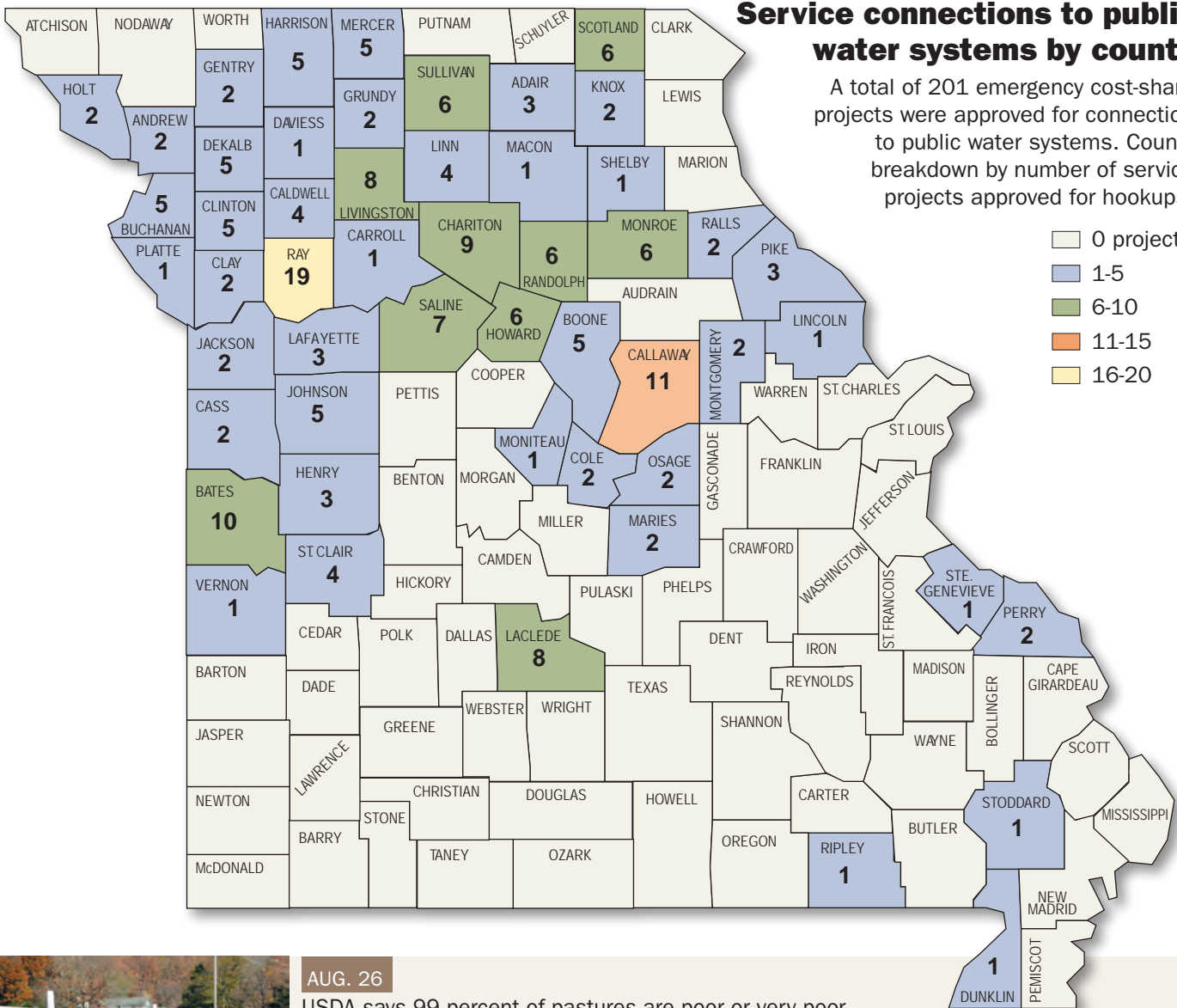
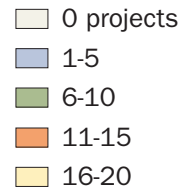
Ultimately, 201 approved projects were connected to public water supplies in 52 counties.

Because of the urgent need of some districts to construct or extend distribution mains to expand their service area, DNR worked tirelessly to expedite construction projects.

Department staff made drought assistance a priority, and provided timely engineering reviews and waivers to facilitate completion of projects within the allotted time frame.

Service connections to public water systems by county

A total of 201 emergency cost-share projects were approved for connection to public water systems. County breakdown by number of service projects approved for hookups:



AUG. 26

USDA says 99 percent of pastures are poor or very poor. Hay and other roughages are 90 percent short or very short. Stock water supplies are 94 percent short or very short. Some producers continue to wean calves early and sell them. Crop conditions: 85 percent of corn and 78 percent of soybeans rated poor to very poor.

PUBLIC WATER SUPPLIES PROTECTED

Drinking water supplies

Districts take conservation measures



During a drought, the Department of Natural Resources and the state's 1,500 community water systems closely monitor their supplies.

The prolonged dry spell meant many of Missouri's water systems experienced substantial increases in customer demand for water at a time when the supply of water was declining. Water levels in lakes, reservoirs, rivers and even wells were dropping faster than in normal years.

The drought's impact varied widely. Some systems had plenty of capacity and others could use backup wells or even buy water from regional suppliers. But many had limited options and faced shortages.

CONSERVATION MEASURES

By mid-August, as many as 46 water systems enacted conservation measures. Thirty-eight were issued as voluntary practices, such as alternating days for watering lawns and gardens. In almost every case, overall demand was reduced.

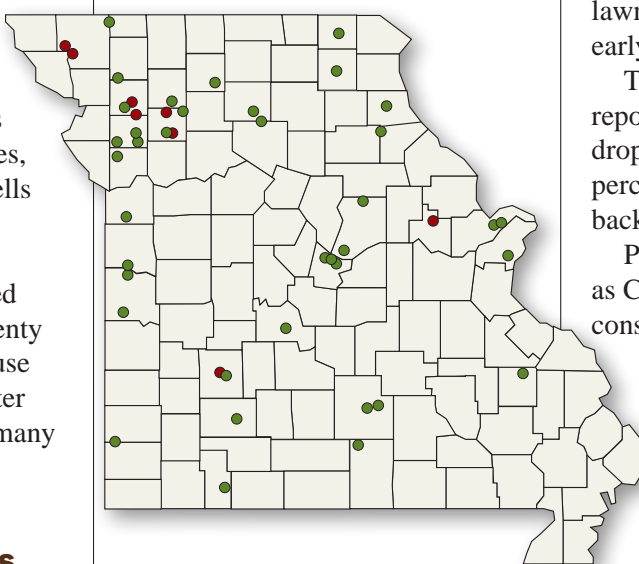
Eight systems issued mandatory conservation orders at one point during the drought.

DNR staff assisted the public water systems with efficiency

Conservation orders issued

Public water systems issued 46 conservation orders throughout Missouri during the drought.

- Mandatory orders
- Voluntary orders



improvements and water leakage problems. Many experienced a dramatic increase in water main breaks due to excessively dry and compacted soils along with prolonged and elevated demand.

DNR also kept regular contact with all public suppliers to monitor the capacity of their supply lakes and reservoirs and provided technical help to any system experiencing drought-related problems.

COLE COUNTY DISTRICT REQUESTS CUTBACK

Cole County Public Water Supply District No. 1 issued a voluntary conservation order in early July by asking customers to alternate days they watered their lawn, and to water only in the early morning.

The district's Dave Kempf reported there was an immediate drop-off in water use of about 12 percent, although use slowly crept back up.

Public water suppliers, such as Cole County PWS, asked consumers to help conserve water.

Examples of measures may include:

Voluntary conservation

- Alternate days for watering lawns and gardens.
- Halt or limit bulk water sales.
- Refrain from washing cars, filling large pools, etc.
- Limit or halt watering of athletic fields and golf courses.
- Request to industrial and commercial consumers to limit or halt automatic irrigation systems for landscaping.
- Request to consumers to reduce water use. >>>



AUG. 27

Governor announces cost-share program review and approval process is complete. State received 11,063 applications, of which 5,885 were approved. Nearly 4,000 have been completed, under way or scheduled for construction.

AUG. 28

More than 97 percent of state is experiencing extreme or exceptional drought.



DNR partners with Missouri Rural Water Association to monitor, provide water

The Department of Natural Resources, working with the Missouri Rural Water Association, provided public drinking water systems throughout Missouri access to emergency equipment to monitor the effects of the drought on their supplies.

Using federal drinking water funds, DNR purchased equipment to measure well water levels and accurately detect leaks, and fire hose components for pumping water.

Quickly checking well water levels assisted many small community water suppliers that had difficulty taking these measurements. This information is critical in assessing water availability. The need to locate and repair leaks is heightened during a drought when demand for water is high and dry conditions cause soil shrinkage, which breaks pipes.

The fire hose fittings are to



“We sincerely appreciate the department’s Public Drinking Water Branch for providing this much-needed equipment to assist Missouri water suppliers in coping with the effects of the drought of 2012.

DIRECTOR JOHN HOAGLAND

be used with fire hoses donated by the Boone County Fire Protection District. The hoses and fittings are available for emergencies when clean drinking water needs to be transported.

DNR PARTNERS

During the drought, the rural association partnered with DNR to assist public water supplies. The association, which has several seasoned operators, offered its members to travel the state and provide hands-

on assistance using the new equipment.

“This unique partnership of regulators and technical assistance providers will help systems monitor water levels at the wellhead, as well as locate potable water leaking from their distribution systems. This helps water systems and the people they serve conserve water and make the best use of their resources,” said John Hoagland, executive director of the association.

Mandatory conservation

- Ban on watering lawns and gardens, car washing or filling exterior pools.
- Tiered rate structures designed to curtail excessive usage.
- Suspend reduced rates for large water users.

- Issue city ordinance violations for customers who ignore requests.

Other conservation measures

- Identify and repair distribution leaks. This may be the most effective measure to take during a drought as well

as improve infrastructure efficiency.

- Activate emergency sources of supply such as emergency wells.
- Activate emergency interconnections with other public water supplies.



AUG. 29

Gov. Nixon views wells installed at Ted and Barb Sheppard’s dairy operation, left, in Texas County and David and Bonnie Higgs’ beef cattle farm, right, in Henry County.



DNR ENSURES WELLS MEET STANDARDS

New wells must meet state standards

New private wells must meet minimum state standards to help protect groundwater resources from contamination due to poor well construction.

The Department of Natural Resources' Division of Geology and Land Survey oversees and ensures well drillers are following state regulations. This includes the construction of domestic, irrigation wells, monitoring wells and heat pump wells. The department also regulates how to properly plug all types of wells.

DNR balances the concerns of landowners and drillers, while at the same time staff performs the overall directive of protecting Missouri's vast underground water supply from contamination



An employee of AAA Water Well Drilling & Pump Co. works on a well Sept. 27 in Cooper County.

due to improper construction and abandonment of wells.

Well drillers are permitted to operate in the state after having met minimum experience and qualifications and passing an exam.

Wells are certified by the department's Geological Survey Program staff as having been properly constructed or closed.

Well Installation Board sets rules for drilling industry

The Well Installation Board adopts and amends rules governing well construction and the well drilling industry to protect Missouri's groundwater resources.

The board also oversees the examination and licensing of all well drillers and pump installers and takes actions against those who violate the Water Well Driller's Act and Well Construction Rules.

The board acts as an appeal

board by sustaining, reversing or modifying enforcement orders issued by the Department of Natural Resources after an appeal has been made by an affected person.

The board must include those who hold valid permits as heat and well installation contractors, as well as public members who use private and public water wells and public water supply districts.

BOARD MEMBERS

Nine members are appointed by the Governor with the consent of the Senate.

- **Danny Flynn**, chairman, Troy
- **Fred Schoen**, vice chairman, Buffalo
- **Robert Broz**, Columbia
- **Joe Gillman**, state geologist
- **Robert Lawrence**, Steele
- **M. Sharlene Morgan**, Rolla
- **Annetta St. Clair**, Joplin
- 2 vacancies

AUG. 30

Remnants of Hurricane Isaac bring relief as it moves into southern Missouri on Aug. 30. It brings rain to rest of state during Labor Day weekend.

AUGUST

St. Louis sees 90-99° temps for 17 days. Average statewide precipitation for June-August is 5.97 inches – third driest summer on record and driest since 1953.

DNR reviews all wells for compliance

Team helps guide landowners, drillers with installations

The team at the Division of Geology and Land Survey daily provides technical assistance to landowners and well drillers.

When the cost-share program started, staff quickly spent the majority of its time focusing on groundwater availability, well drilling and connecting drillers with landowners through the 114 soil and water district offices.

Staff each week contacted all active drilling contractors to determine how many wells were completed the previous week and how many were pending.

WELLS MUST COMPLY

The DNR team reviewed all cost-share well records for compliance with construction rules and assisted landowners and drillers with information for constructing wells. After the records were approved, they were immediately faxed to the appropriate soil and water district office to expedite payment to landowners.

As of Nov. 15, DNR received 2,126 cost-share well completion records. "The number of water wells drilled in the state and wells certified by the department more than doubled this year as compared to the same time frame last year," said Joe Gillman, director of the Division of Geology and Land Survey.

Drillers have 60 days to file additional well completion reports. The number of cost-share completion records is expected to approach 2,400.



Aug. 13: Gov. Nixon visits Darren and Pam Wilson's Newton County dairy farm to survey a well that is being drilled. "The wells we drill, the piping systems we put in are going to add value to the real estate for years to come," the Governor said.

“The drought cost-share assistance program is a great example of professionals coming together to support an important initiative to protect the livelihood of many Missourians.

DIVISION DIRECTOR JOE GILLMAN

List of permitted pump installers, drillers online

DNR maintains searchable lists of permitted pump installers and water well drillers as well as certified wells drilled. Find this and other information about DNR's role in protecting Missouri groundwater at dnr.mo.gov/geology.

SEPT. 10

Governor issues executive order to extend state of emergency to Nov. 15 because of heat, fire risk and prolonged drought. Farmers also will have more time to complete projects. Order establishes Program Audit and Compliance Team to ensure accountability.

► Moments after signing order, Gov. Nixon calls soil and water districts to update them on drought efforts.



DRILLERS, FARMERS BENEFIT

PROFILE

Chairman and water well driller Summer a challenge for Troy businessman

Danny Flynn, owner of Flynn Drilling Co. in Troy, is chairman of the Missouri Well Installation Board. The board sets standards that protect Missouri groundwater.

Established in 1954, Flynn Drilling employs 40 people who provide commercial and residential water well services.

During the drought, Flynn put his geothermal business on hold and devoted time to those in greatest need. “While geothermal energy provides long-term savings, when you are out of water and can’t care for your livestock or crops, your way of life and livelihood become compromised,” Flynn said.

CHALLENGING SUMMER

“This summer was the most stressful of the 25-plus years I have been running the company due to the high demand, coupled with the fact that at first, our customers were worried we would not get to them in time to meet the deadline. That all changed when Gov. Nixon extended the deadline.

“Assisting farmers through the program was a very good shot in the arm for us,” said Flynn.



“While I enjoy a challenge, I was glad when we reached the end. Physically exhausting and extremely mentally exhausting, these guys worked 12-hour days, six days a week.

DRILLER DANNY FLYNN

“My suppliers ran out of material about half-way through. These companies have been stocking a minimum supply because demand simply was not there. All of a sudden, demand was there and a shortage in PVC casing had created a minor problem. I am a huge supporter of our state and I try to purchase from Missouri suppliers,” Flynn said.

“I appreciate the Department of Natural Resources’ Geological Survey Program staff. When I had questions, I got answers, which is wonderful. I know the pressure they were under and as stressful as it was, when I needed something, everyone was very helpful and pleasant – everyone. They did an awesome job. I just can’t say enough,” Flynn said.



Flynn Drilling Co. drilled or deepened about 80 water wells during the emergency cost-share program.

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TIMELINE

SEPT. 10

Gov. Nixon updates electric cooperatives around Missouri on Nov. 15 extension to get water projects completed.

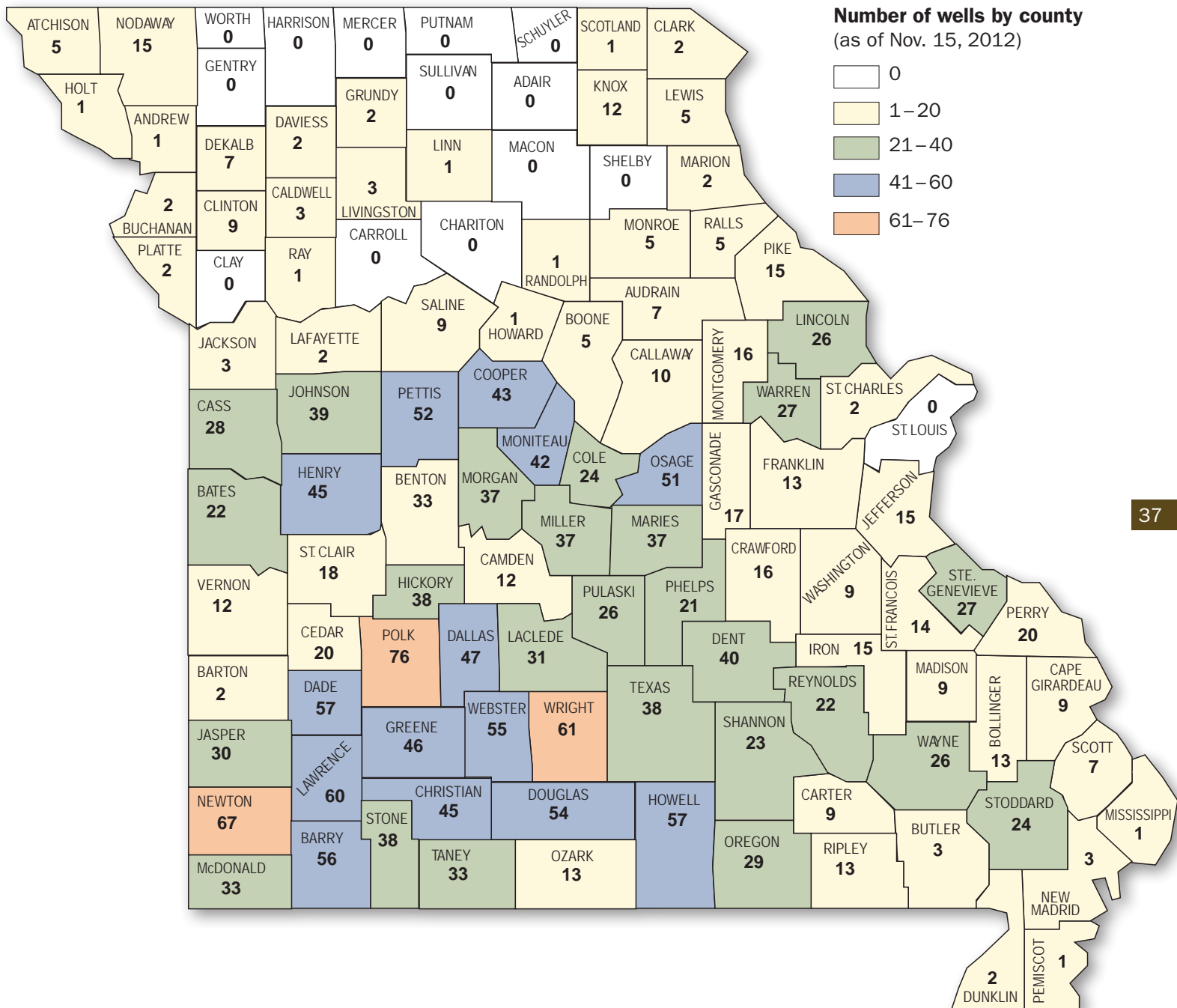
SEPT. 29

USDA says pastures are improving: 84 percent are poor or very poor. Hay and roughages are 90 percent short or very short. Stock water supplies are 84 percent short or very short.



Wells drilled or deepened through cost-share program

Southwestern counties had the most wells drilled or deepened with 2,126. That number is expected to approach 2,400. Missouri's geology and groundwater resources vary greatly across the state. Water resources in northern counties generally are limited in quantity and are of poor quality. Southern counties have a greater abundance of fresh water.



SEPT. 30

More than 4,900 cost-share water projects are completed, under way or scheduled for construction.

► Missouri Climate Center reports that the average statewide temperature for first nine months of 2012 is warmest on record. Precipitation averaged 24.5 inches, or 8 inches below normal.

STATE PARTNERSHIPS ESSENTIAL TO PROGRAM SUCCESS

State partners

Extension, other agencies on front lines helping Missourians

The University of Missouri Extension and its faculty have taken an active leadership role during the historic drought. This has included developing educational materials and programming, and providing technical assistance for homeowners, businesses and the agricultural community.

The extension also developed Web and Facebook pages to address drought problems and solutions. Topics included nitrate poisoning, heat-related disabilities, government programs, management strategies, animal nutrition and making silage.

extension.missouri.edu

MU Extension faculty teams also developed and conducted numerous educational programs around the state. Among them:

- The Northwest Extension met with farmers in Albany July 31 to advise them how best to manage their livestock and forages.
- About 200 farmers attended a Drought Survival Tour Aug. 14 near Pleasant Ridge. Barry County Extension Center topics included dealing with high nitrate levels in feeds, stretching hay supplies and renovating pastures.

Extension faculty also helped the soil and water districts implement Executive Order 12-08.



Small businesses eligible for SBA loans

The U.S. Small Business Administration made low-interest disaster loans available to small, nonfarm businesses in Missouri.

The Economic Injury Disaster Loans were available because of the statewide agricultural disaster declaration issued by the USDA at Gov. Nixon's request.

"These loans can help businesses that were impacted directly by this disaster, or that depended on the farmers who have been hit hard," the Governor said.

Small, nonfarm businesses and agricultural cooperatives, small businesses engaged in aquaculture, and most private nonprofits could apply for loans of up to \$2 million.

USDA service assists, allocates \$1.8M for Missouri farmers

The U.S. Department of Agriculture's Natural Resources Conservation Service in Missouri allocated \$1.8 million to assist Environmental Quality Incentives Program and Wildlife Habitat Incentives Program producers who suffered setbacks.

Missouri's state conservationist made funding available to farmers with failed practices from an active EQIP contract, and for unfunded EQIP applications that were eligible. Producers were allowed to modify EQIP contracts to allow for grazing and livestock watering.

The \$1.8 million included a \$100,000 allotment of WHIP funding that was designated solely for the re-application of failed practices in active WHIP contracts.

NRCS also allowed haying and grazing of Wetlands Reserve Program easement areas in drought-affected areas.

430 NRCS EMPLOYEES ASSIST

NRCS staff throughout Missouri provided technical assistance in the planning and implementation of not only the NRCS-funded practices, but also state-funded practices. About 430 NRCS employees worked 33,700 hours to support the emergency cost-share program.



OCT. 4

Call center closes. 31,241 calls have been made since Aug. 14.

► USDA says 71 percent of state's pastures are poor or very poor. Hay and other roughages are 87 percent short or very short. Stock water supplies are 84 percent short or very short.

Powering up Cooperatives “vital partners” in drought relief

Missouri’s electric cooperatives joined forces with Gov. Nixon to install electrical lines to power up drought-relief wells drilled across the state. He and the Department of Public Safety reached out to the co-ops to assist farmers needing wells.

Gov. Nixon called on the cooperatives to do everything possible to extend electrical lines to serve new wells. Many of the wells were in southwest Missouri, where many cattle and poultry operations are located.

Electric co-op managers Mitch McCumber at New-Mac Electric, James Ashworth at Southwest Electric and Dan Singletary at Howell-Oregon Electric said their crews pushed hard throughout the hot summer to get electrical lines extended to these wells.

In news conferences held Sept. 10 at the three co-ops, Gov. Nixon said the cooperatives were “vital partners” in this emergency effort.

VITAL PARTNERS

More than 4,400 of the 5,800 emergency projects approved were completed or under way at this time, which prompted Gov. Nixon to announce he was extending the state of emergency and deadline to complete projects to Nov. 15.

“I had my director of policy make one phone call – to [Association CEO] Barry Hart. It was an instant network. These wells were in remote areas. Your folks worked nights and weekends, knowing we’ve got to keep [livestock producers] in business.”

GOV. NIXON

Speech at Association of Missouri Electric Cooperatives’ 75th annual meeting



Gov. Nixon thanks the cooperatives and linemen for their work. Left: New-Mac Electric Cooperative workers in Neosho. Right: Southwest Electric workers.



Pumps help keep power flowing to co-ops

Historic low water levels required Associated Electric Cooperative to deploy diesel-drive pumps at its New Madrid Power Plant to supply Missouri’s electric cooperatives, which in turn provide



Mounted on pontoon boats, pumps move water into an intake structure.

power to about 660,000 homes, farms and businesses.

Associated is the wholesale power generator for co-ops and operator of the plant, which is located on the Mississippi River. It used the pumps to move water into the intake structures and then into a wet well that supplies water to two, 600-megawatt generating units. Typically the

intake structures are submerged 25 feet.

As the river level drops below the top of the intake pipe that delivers water to the plant for cooling, the river can fall too low to offer effective water flow. The

pumps then are turned on to decrease the plant’s “derate,” or loss of generation efficiency. By periodically using the pumps, the units could produce more megawatts to meet co-ops’ needs. However, Associated’s costs increased significantly, which ultimately cost members, many of whom already were impacted by the drought.



OCTOBER

Missouri has not experienced a drought like 2012’s in nearly 60 years.



► Harvest continues on Missouri farms.



NOV. 14

DNR employees inspect well project at Brian and Kristy Allen’s farm in Pettis County.

FARM FAMILY RECHARGED



Emergency program keeps cattle on Henry County farm, protects against future droughts

David and Bonnie Higgs of Windsor were among the thousands of livestock producers who participated in the emergency cost-share program. Their 500-acre farm is home to 150 head of black Angus cattle.

In a normal year, the Higgses use more than 2,700 feet of water lines to move water from their ponds to the livestock. However, under the extremely dry conditions and high temperatures last summer, all but one of their ponds became too low to pump, and the remaining water source was losing depth quickly.

"We didn't have a Plan B," David said. "We wouldn't have had any other option but to sell our cattle."

600-FOOT-DEEP WELL

Through the Governor's drought relief project, the Higgses were able to drill a 600-foot-deep well and install the necessary pressure tank, pumps and housings to route water to seven watering tanks.

The well pumps 30 gallons of water per minute into a 50-gallon pressure tank that feeds their existing system of water lines.

Their project was completed in August and has helped them



Farmer David Higgs and the Governor walk away from the nearly dry pond. A new well now provides water for his cattle. Below is the Higgs family with Gov. Nixon and Agriculture Director Dr. Jon Hagler.



I know that Missouri producers are much better off because of this program, especially in my community.

FARMER DAVID HIGGS

keep their cattle on the farm and continue to use rotational grazing practices to care for both the cattle and the land.

The program helped the Higgses and thousands of other Missouri farmers and ranchers find immediate and substantial relief to the ongoing drought.

David said he was thankful for the professional and timely response he received on his application that provided a permanent solution to dry conditions.



Missouri recharges

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Office of Missouri Governor
Jeremiah W. (Jay) Nixon

